

REMARKS

I. FORMAL MATTERS

Claims 1-16, 30-38 and 48-58 are currently pending in the application. Claims 1, 6, 11, 16, 30, 32, 37 and 52 are the only currently pending independent claims.

Applicants' arguments filed on May 5, 2008 have been considered but are not deemed persuasive. Specifically, the Office Action states that "Applicant has amended independent claims 1, 6, 11, 16, 30, 32, 37 and 52 to include the adhesive section is made of resin overall. However Hashimoto discloses this feature."

II. EXAMINER INTERVIEW

An Examiner interview was held on October 8, 2008. During the interview, the Examiner acknowledged that in view of Applicants remarks, Koyanagi was not a proper primary reference for finally rejecting the outstanding claims.

Accordingly, a Request for Continuing Examination was not filed herewith. Applicants respectfully request withdrawal of the finality of the outstanding rejection in light of the arguments presented herein and during the interview.

III. CLAIM REJECTIONS

Claims 1-16, 30-38 and 48-58 are rejected under 35 U.S.C. §103(a) as being unpatentable over Koyanagi (US 7,265,402) in view of Hashimoto (US Pub. 2003/0123779). Applicants respectfully traverse the rejection.

The Office Action alleges that Koyanagi discloses a solid state image sensor comprising: an effective pixel region 23b, light transparent cover 51, adhesive section 46, and connection terminals 16. The Office Action also acknowledges that Koyanagi does not disclose the light-transparent cover 51 having planar dimensions smaller than those of the solid state image sensor, but asserts that it would have been obvious to use any suitable size of cover for the device.

Applicants respectfully submit that Koyanagi does not teach or suggest, or in any way render obvious, the light-transparent cover of the present invention. Independent claims 1, 6, 11, 16, 30, 32, 37, and 52 each recite, in relevant part, "a light-transparent cover arranged opposite to said effective pixel region and having planar dimensions smaller than those of said solid state image pickup device".

Fig. 2A below (at left) of the present invention clearly illustrates that that the planar dimensions of the light-transparent cover 4 are smaller than the planar dimensions of the solid state image pickup device 2. Fig. 1, of Koyanagi, below (at right) shows that the planar dimensions of the solid state image sensor device 1 (alleged solid state image pickup device) are equal to the planar dimensions of the cap 51 (alleged transparent cover).

FIG. 2B

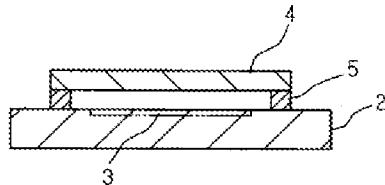


FIG. 1

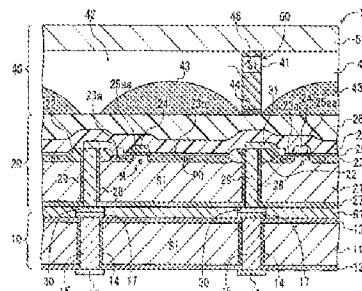


Fig. 1 of Koyanagi clearly illustrates that the dimensions of the cap 51 are not less than the dimensions of the sensor 1. In addition, Koyanagi states that “the plan shape of the cap 51 is rectangular in accordance with the plan shape of the image sensor 1.” [Koyanagi, col. 14, ll. 52-53]. Therefore, Koyanagi discloses that the shape and therefore the planar dimensions of the cap should be made in accordance with the planar dimensions of the sensor, rather than “having planar dimensions smaller than those of the solid state image sensor” as recited in independent claims 1, 6, 11, 16, 30, 32, 37 and 52.

Moreover, the present invention discloses and illustrates that the planar dimensions of the light-transparent cover are to be smaller in size than the planar dimensions of the solid state image pick up device. The originally filed specification states that the size reduction of the light-transparent cover "permits the size reduction of the solid state image pickup device." [pg. 27, ll. 10-13.] Furthermore, the specification recites that prior art devices have been limited in size reduction due to the planar dimensions of the solid state image pickup device itself. [pg. 4, ll. 13-24.] Koyanagi is such a size-limited prior art device.

In addition, Applicants note that the MPEP clearly states that the proposed modification of the prior art to reach a finding of obviousness cannot render the prior art unsatisfactory for its intended purpose; if the modification would render the prior art unsatisfactory for its intended purpose, there can be no suggestion or motivation to make the proposed modification. MPEP §2143.01(V). As provided by the Federal circuit, a 35 U.S.C. §103 rejection based upon a modification of a reference that destroys the intent, purpose or function of the invention disclosed in a reference, is not proper and the *prima facie* case of obviousness cannot be properly made. In short there would be no technological motivation for engaging in the modification or change. To the contrary, there would be a disincentive. *In re Gordon*, 733 F. 2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

The modification suggested by the *Office Action* to make the planar dimensions of the cap 51 smaller than that of the sensor 1 would make the device of Koyanagi unsatisfactory for its intended purpose. If the planar dimensions of the cap 51, shown in Fig. 1 of Koyanagi, was made smaller than the sensor 1, the cap would not perform its function of closing the “whole upper opening of the cavity 42.” [Koyanagi, col. 42, ll. 28-29.]

The Office Action also alleges that it would have been obvious to modify the device of Koyanagi with the adhesive 36 of Hashimoto to achieve the adhering section of the present invention. Applicants respectfully disagree.

Figure 2 (reproduced above) of Koyanagi discloses an adhesive section 46 which is disposed **within** the image sensor 1. Moreover, the adhesive section 46 of Koyanagi merely adheres a single crystal Si plate 41 and quartz cap 51 inside of the image sensor 1. Therefore, Koyanagi does teach, suggest or render obvious “an adhering section, which is made of resin overall, for adhering said solid state image pickup device and said light-transparent cover” as claimed.

Even if the adhesive section 46 of Koyanagi was exchanged with the adhesive 36 of Hashimoto, the adhesive of Hashimoto does not adhere a solid state image pickup device and a light transparent cover. Rather, Hashimoto discloses only that a “second substrate 30 is bonded to the first substrate 10 through an adhesive layer 36.” Therefore, Koyanagi in view of Hashimoto does teach or suggest or in any way render obvious the adhering section of the present invention as recited in independent claims 1, 6, 11, 16, 30, 32, 37, and 52.

Applicants also respectfully submit that Koyanagi does teach or suggest or in any way render obvious “an adhering section, which is made of resin overall” for adhering the solid state image pickup device and said light transparent cover, as recited in independent claims 1, 6, 11, 16, 30, 32, 37, and 52.

Koyanagi discloses elements 41, 44, 45, 46 and 50 which are disposed in a portion of a region where the quartz cap 51 opposes semiconductor light receiving elements 25a, 25b and 26. [See Koyanagi, Abstract, Fig. 2]. The combination of these elements 41, 44, 45, 46, and 50 adheres the quartz cap 51 and the light receiving elements. Because the combination of elements 41, 44, 45, 46 and 50 of Koyanagi includes Si 41 and Al 44, Koyanagi does not teach an adhering section “which is made of resin overall”, as claimed.

In addition, as mentioned above, MPEP 2143.01 states that “if proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).” Applicants respectfully submit that modifying the device of Koyanagi with the adhesive of Hashimoto would render the device unsatisfactory for its intended purpose.

Applicants note that the Al 44 of Koyanagi is used as an etch stop, in the etching process of Koyanagi to “protect the microlenses 43 located below the adhesive 45 when the Si plate 41 and the adhesive 45 are etched.” [Koyanagi col. 19, lines 1-6]. Therefore, if the adhesive 36 of Hashimoto were exchanged with the combination of elements 41, 44, 45, 46 and 50 of Koyanagi, the microlenses 43 located below the adhesive 45 may get damaged by the etching. For this reason, this modification would render the device of Koyanagi unsatisfactory for its intended purpose.

In view of the above arguments, Applicants submit that the Office Action fails to establish a *prima facie* case of obviousness at least with respect to each of the independent claims 1, 6, 11, 16, 30, 32, 37 and 52. Therefore, Applicants request withdrawal of the 35 U.S.C. §103(a) rejection

of independent claims 1, 6, 11, 16, 30, 32, 37 and 52 and claims 2-5, 7-10, 12-15, 31, 33-36, 38, 48-51 and 53-58 which depend therefrom.

CONCLUSION

For the foregoing reasons, and in view of the amendments above, Applicants believe all pending claims (i.e., claims 1-16, 30-38, 48-58) are in condition for allowance and hereby request allowance.

This response is being electronically filed the first business day following the three-month response date of Saturday, November 1, 2008. Thus, Applicants believe that no fees or extensions are required. However, if for any reason a fee is required, the Office is conditionally authorized to charge Deposit Account No. **04-1105** for the appropriate amount(s).

Dated: November 3, 2008

Respectfully submitted,

By: William J. Daley
William J. Daley

Registration No.: 35,487
David G. Conlin

Registration No.: 27,026
EDWARDS ANGELL PALMER & DODGE LLP
P.O. Box 55874
Boston, Massachusetts 02205
(617) 439-4444517-5567
Attorneys/Agents For Applicant

Customer No. 21874